SERVICE MANUAL

FISHER

INTEGRATED STEREO AMPLIFIER

CA-345

(EUROPE)

132 327 41

SPECIFICATIONS

System ..... Integrated Stereo Amplifier
Remote Control (REM-335) ..... 15-function, wireless remote control

POWER AMPLIFIER SECTION

Minimum RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with 8-ohm load ..... 55 Watts
Power Bandwidth ..... 20 Hz – 20 kHz
Total Harmonic Distortion ..... 0.5 %
I.M. Distortion ..... 0.5 %
Speaker Damping ..... > 20

PREAMPLIFIER SECTION

Frequency Response
- Phono (RIAA) ..... ±1 dB
- Aux (20 Hz – 20 kHz) ..... ±1 dB

Input Sensitivity and Impedance
- Phono ..... 2.5 mV/50 kΩ
- Deck/Video/Surround ..... 150 mV/50 kΩ
- Tuner/CD ..... 150 mV/50 kΩ

Phono Max. Input Capability ..... 150 mV

Graphic Equalizer
- 63 Hz ..... ±10 dB
- 250 Hz ..... ±10 dB
- 1 kHz ..... ±10 dB
- 4 kHz ..... ±10 dB
- 16 kHz ..... ±10 dB

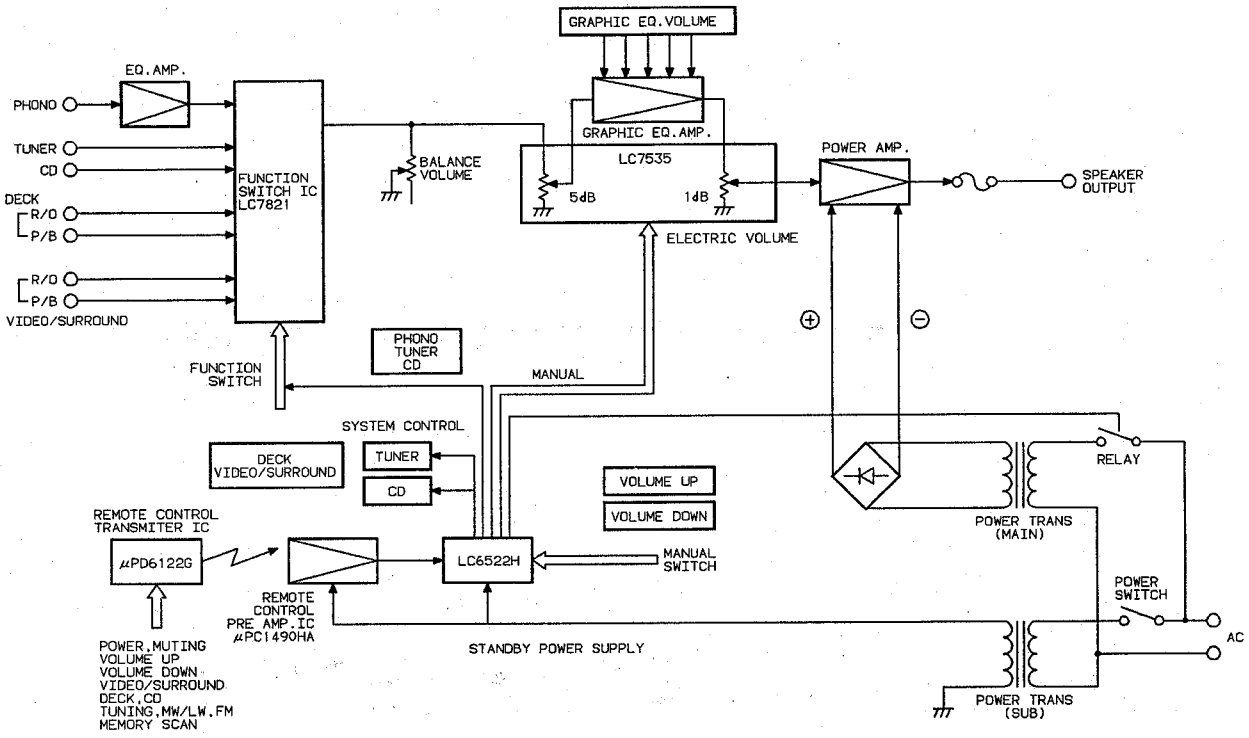
Hum and Noise (IHF Short Circuit, A Network)
- Phono ..... 68 dB
- Deck/Video/Surround ..... 85 dB
- Tuner/CD ..... 85 dB

GENERAL

Power Requirements ..... AC 110/220 V (50 Hz) 260 Watts
AC Outlets 3
Dimensions (WxHxD) ..... 400 x 91 x 202 mm
Weight (approx.) ..... 5.4 kg

– Specifications and design are subject to change without notice. –

FUNCTIONAL BLOCK DIAGRAM



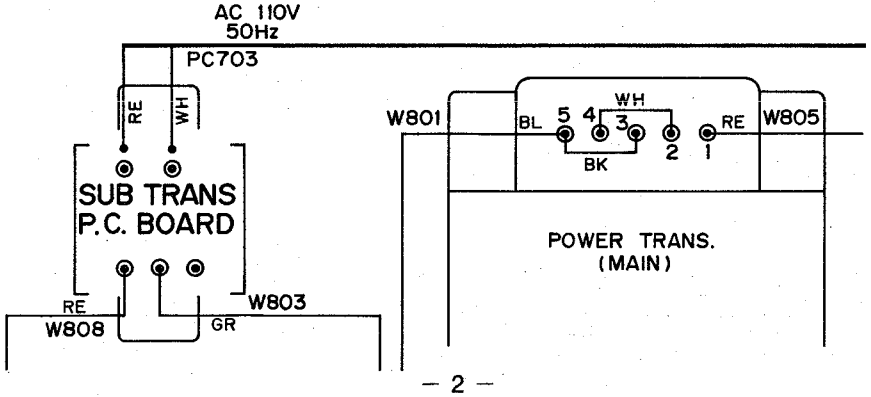
IMPORTANT NOTE

The Amplifier has been Factory-adjusted for operation on 220V AC. The voltage can be changed for operation on 110V AC by making the following changes on the Amplifier inside shown Wiring Diagram below.

1. Remove the AC plug from the wall outlet.
2. Remove the screws securing the cover.
3. Disconnect White lead from Power Trans (Main) Terminal No.2, and then connect it to Power Trans (Main) Terminal No.4.
4. Disconnect Black lead from Power Trans (Main) Terminal No.4, and then connect it to Power Trans (Main) Terminal No.5.
5. Disconnect Green lead W803 from Sub Trans P.C.Board Right Terminal and then connect it to sub Trans.

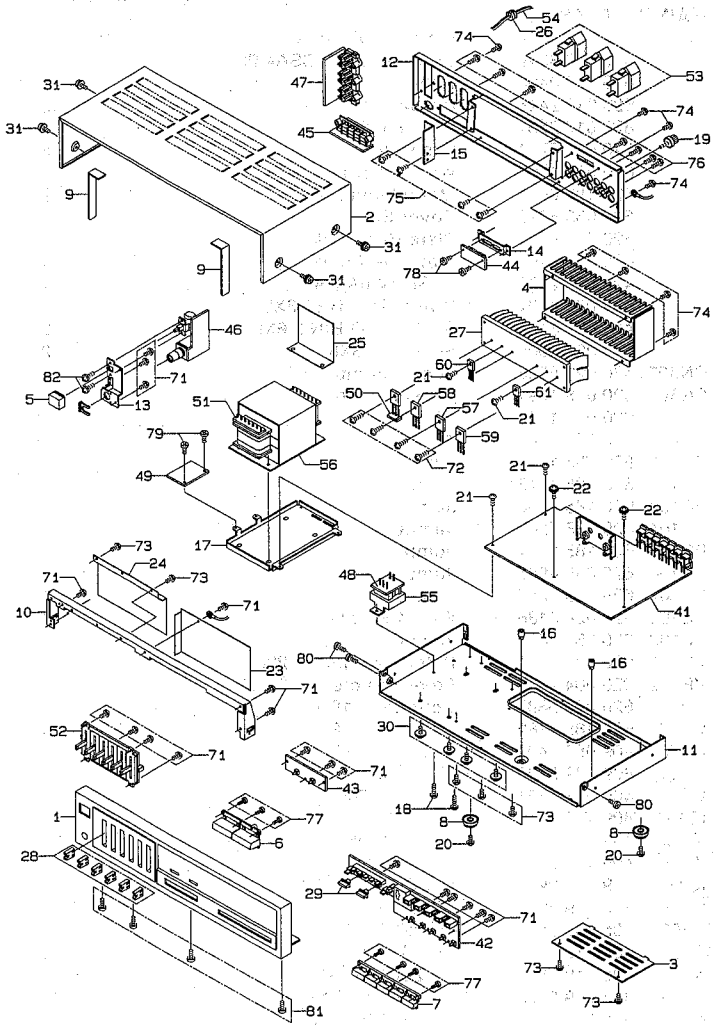
The Amplifier is now ready 110V operation. DO NOT attempt to operate the Amplifier on 220V.
Damage will result !

WIRING DIAGRAM (Power Supply Section)



CABINET & CHASSIS PARTS LIST/EXPLODED VIEW

Ref. No.	Part No.	Description	Q'ty
PACKAGE			
	620 000 0024	Bag Polyethylene	1
	620 059 4035	Pad Right	1
	620 059 4042	Pad Left	1
	620 059 6596	Patching Sheet	1
	620 062 0543	Serial No. Sheet	2
	620 184 3255	Box Corrugate-Exp.	1
	620 148 8029	Sheet Polyethylene	1
ACCESSORIES			
	620 004 1447	REM-335 (Remote Control)	1
	620 057 8783	Bag Fan	1
	620 062 0543	Serial No. Sheet	1
	620 152 2624	Certificate Card	1
	620 184 7154	Explanatory Booklet	1
CABINET			
	620 062 0543	Serial No. Sheet	1
	620 125 8424	Wire Band	21
1	620 183 0545	Cabinet Front Assy	1
	620 183 0613	Plate Decorate (G-EQ)	1
	620 183 0668	Plate Decorate	1
	620 183 0729	Cabinet Front	1
	620 047 4191	Leg	2
	620 050 3679	Filter	1
2	620 045 5787	Cover	1
3	620 183 0774	Cover Bottom	1
4	620 183 0781	Cover Heat Sink	1
5	620 046 5342	Knob	1
6	620 183 0804	Knob Volume	1
7	620 046 8336	Knob Function	1
8	620 047 3842	Leg	2
9	620 048 4541	Metal Reinforce	2
10	620 048 4800	Metal Reinforce	1
11	620 183 0859	Chassis	1
12	620 183 0903	Panel Rear	1
13	620 050 2726	Metal Mount Switch	1
14	620 050 2733	Metal Mount Switch	1
15	620 185 2790	Metal Sever	1
16	620 050 4225	Mount P.C.B.	2
17	620 183 0958	Metal Mount Trans	1
18	620 051 1735	Screw, Brazier Hd. Tapping-C, +M3.0X8	2
19	620 051 2152	Screw Ground	1
20	620 051 3692	Screw, Brazier Hd. Tapping-B, +M3.0X6	2
21	620 051 3708	Screw, Brazier Hd. Tapping-B, +M3.0X8	4
22	620 051 3715	Screw, Brazier Hd. Tapping-B, +M3X14	2
23	620 183 1078	Plate Shield	1
24	620 184 9509	Plate Shield	1
25	620 183 1160	Plate Sever	1
26	620 053 2136	Bushing	1
27	620 183 1184	Heat Sink	1
28	620 110 9658	Knob Cap	6
29	620 111 4386	Knob Index	2
30	620 123 0833	Screw, Bind Hd. Tapping-C, +M4X10	4
31	620 122 9738	Screw, Bind Hd. Tapping, +M3.0X8	4
41	620 183 4314	Main P.C.B. Assy	1
42	620 183 4321	Control P.C.B. Assy	1
43	620 183 4338	Volume P.C.B. Assy	1
44	620 183 4345	R/C P.C.B. Assy	1
45	620 183 4352	Speaker Out P.C.B. Assy	1
46	620 183 4369	Power Switch P.C.B. Assy	1
47	620 183 4376	Power Supply P.C.B. Assy	1
48	620 183 4383	Sub Trans P.C.B. Assy	1
49	620 183 4406	EC Terminal P.C.B. Assy	1
50	620 183 4413	Power TR. P.C.B. Assy	1
51	620 184 9691	Sub Trans 1 P.C.B. Assy	1
52	620 006 1490	Slide Volume Unit	1
53 ⚠	620 017 1212	AC Socket	3
54 ⚠	620 023 7550	Power Cord	1
55 ⚠	620 182 9778	Power Trans (Sub)	1
56 ⚠	620 182 9846	Power Trans (Main)	1
57	405 022 1606	TR 2SD1289-Q [Q104]	1
or	405 080 6100	TR 2SD1289-R	1
or	405 080 7800	TR 2SC3181N-O	1
or	405 080 7909	TR 2SC3181N-R	1
58	405 009 6600	TR 2SB966-Q [Q105]	1
or	405 080 6209	TR 2SB966-R	1
or	405 080 7602	TR 2SA1264N-O	1



Ref. No.	Part No.	Description	Q'ty
or	405 080 7701	TR 2SA1264N-R	1
59	405 009 6600	TR 2SB966-Q [Q106]	1
or	405 080 6209	TR 2SB966-R	1
or	405 080 7602	TR 2SA1264N-O	1
or	405 080 7701	TR 2SA1264N-R	1
60	405 026 0803	TR 2SD947 [Q701]	1
61	405 026 0803	TR 2SD947 [Q702]	1
71	411 020 5706	SCR S-TPG BRZ 2.6X8	20
72	411 020 5904	SCR S-TPG BRZ 3X10	4
73	411 020 7700	SCR S-TPG BRZ 3X6	7
74	411 099 9704	SCR S-TPG BRZ 3X6	8
75	411 020 8004	SCR S-TPG BRZ 3X8	4
76	411 099 9803	SCR S-TPG BRZ 3X8	7
77	411 021 1202	SCR S-TPG BIN 2X8	7
78	411 021 2704	SCR S-TPG BIN 2.6X6	2
79	411 021 3107	SCR S-TPG BIN 2.6X8	2
80	411 021 5705	SCR S-TPG BIN 3X6	3
81	411 021 6603	SCR S-TPG BIN 3X8	4
82	411 003 8908	SCR PAN+SW 3X6	2

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MAIN P.C.B. ASSY			
41	620 183 4314	Main P.C.B. Assy	1
	620 007 3349	Ceramic.OSC CSA4.00	1
	620 017 0406	Relay	1
	620 017 2448	Pin Jack 4P	2
	620 017 2561	Pin Jack 6P	1
	620 017 2721	Fuse Clip	8
	620 031 4763	Wire Wrap Terminal	2
	620 183 0910	Metal Mount (IC)	2
	620 053 6899	Cover Safety	1
	620 053 9241	Plate Heat Sink	1
	620 183 1191	Plate Heat Sink	1
⚠	423 007 2103	FUSE T4.0A 250V	4
	411 020 8004	SCR S-TPG BRZ 3X8	1
	411 021 3107	SCR S-TPG BIN 2.6X8	2
	411 002 9005	SCR PAN 3X8	2
CN302	620 020 5825	Socket Jumper 8P	1
CN303	620 018 1891	Socket Jumper 9P	1
L101	620 027 1240	AF Coil	1
L102	620 027 1240	AF Coil	1
PC101	620 185 1243	Jumper	1
PC102	620 185 1243	Jumper	1
PC103	620 185 1250	Jumper	1
PC104	620 185 1267	Jumper	1
PC105	620 185 1274	Jumper	1
PC106	620 055 4985	Jumper	1
PC107	620 183 1382	Jumper	1
PC108	620 024 3186	Wire 4 Parallel	1
PC109	620 055 3827	Jumper	1
VR101	620 004 7319	Potentiometer (B-200Ω)	1
VR102	620 004 7319	Potentiometer (B-200Ω)	1
W101	620 020 5887	Connector 1P Assy	1
W102	620 185 1182	Connector 1P Assy	1
IC101	409 057 4403	IC UPC4570C	1
IC102	409 109 5105	IC LC7821	1
IC103	409 057 4601	IC UPC4570HA	1
IC104	409 118 0504	IC LC7535	1
IC105	409 149 9101	IC UPC1298V	1
IC106	409 149 9101	IC UPC1298V	1
IC107	409 122 2907	IC LC6522H-3374	1
Q101	405 039 5802	TR 2SC3792	1
Q102	405 039 5802	TR 2SC3792	1
Q107	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q108	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q109	405 034 6804	TR DTA114-ES	1
Q110	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q111	405 023 8307	TR 2SD438-E-MP	1
or	405 023 8505	TR 2SD438-F-MP	1
Q112	405 007 5100	TR 2SB560-E-MP	1
or	405 007 5308	TR 2SB560-F-MP	1
Q113	405 035 7107	TR 2SD1913-R	1
or	405 035 7206	TR 2SD1913-S	1
Q114	405 004 4502	TR 2SA608-F-NP	1
or	405 004 5004	TR 2SA608-G-NP	1
Q115	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q116	405 004 4502	TR 2SA608-F-NP	1
or	405 004 5004	TR 2SA608-G-NP	1
Q117	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q118	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q220	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q250	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q251	405 019 2708	TR 2SC536-F-NP	1
or	405 019 3804	TR 2SC536-G-NP	1
Q252	405 006 6504	TR 2SA984-E	1
or	405 006 6702	TR 2SA984-F	1
Q901	405 010 9607	TR 2SC1571-F-NP	1
or	405 010 9706	TR 2SC1571-G-NP	1
Q902	405 010 9607	TR 2SC1571-F-NP	1
or	405 010 9706	TR 2SC1571-G-NP	1
Q903	405 010 9607	TR 2SC1571-F-NP	1
or	405 010 9706	TR 2SC1571-G-NP	1

Ref. No.	Part No.	Description	Q'ty
Q904	405 010 9607	TR 2SC1571-F-NP	1
or	405 010 9706	TR 2SC1571-G-NP	1
Q905	405 018 0101	TR 2SC3331-T	1
or	405 018 0200	TR 2SC3331-U	1
Q906	405 018 0101	TR 2SC3331-T	1
or	405 018 0200	TR 2SC3331-U	1
Q907	405 018 0101	TR 2SC3331-T	1
or	405 018 0200	TR 2SC3331-U	1
Q908	405 018 0101	TR 2SC3331-T	1
or	405 018 0200	TR 2SC3331-U	1
Q909	405 018 0101	TR 2SC3331-T	1
or	405 018 0200	TR 2SC3331-U	1
Q910	405 018 0101	TR 2SC3331-T	1
or	405 018 0200	TR 2SC3331-U	1
D101	407 008 0405	DIODE GMB01	1
D102	407 008 0405	DIODE GMB01	1
D103	407 092 4105	DIODE DSA20TC-KD3	1
D104	407 092 4105	DIODE DSA20TC-KD3	1
D105	407 092 4105	DIODE DSA20TC-KD3	1
D106	407 092 4105	DIODE DSA20TC-KD3	1
D107	407 049 7807	ZENER DIODE GZA18Y-BT	1
D108	407 049 7807	ZENER DIODE GZA18Y-BT	1
D109	407 088 6502	DIODE MPG06D-PKG3	1
D110	407 050 5502	ZENER DIODE GZA5.6Y-BT	1
D112	407 088 6502	DIODE MPG06D-PKG3	1
D113	407 050 5502	ZENER DIODE GZA5.6Y-BT	1
D114	407 005 3805	DIODE DS442-BT	1
D115	407 005 3805	DIODE DS442-BT	1
D116	407 008 0405	DIODE GMB01-BT	1
D200	407 005 1603	DIODE DS135D	1
D201	407 008 0405	DIODE GMB01	1
D202	407 008 0405	DIODE GMB01	1
D901	407 049 7807	ZENER DIODE GZA18Y-BT	1
C101	403 018 8509	CERAMIC 220P K 50V	1
C102	403 018 8509	CERAMIC 220P K 50V	1
C103	403 023 5807	CERAMIC 330P K 50V	1
C104	403 023 5807	CERAMIC 330P K 50V	1
C105	403 047 1502	ELECT 4.7U M 25V	1
C106	403 047 1502	ELECT 4.7U M 25V	1
C107	403 038 2303	ELECT 100U M 6.3V	1
C108	403 038 2303	ELECT 100U M 6.3V	1
C109	403 018 8509	CERAMIC 220P K 50V	1
C110	403 018 8509	CERAMIC 220P K 50V	1
C111	403 059 0401	POLYESTER 0.018U K 50V	1
C112	403 059 0401	POLYESTER 0.018U K 50V	1
C113	403 061 8709	POLYESTER 4700P K 50V	1
C114	403 061 8709	POLYESTER 4700P K 50V	1
C115	403 047 1502	ELECT 4.7U M 25V	1
C116	403 047 1502	ELECT 4.7U M 25V	1
C117	403 018 8509	CERAMIC 220P K 50V	1
C118	403 018 8509	CERAMIC 220P K 50V	1
C119	403 018 8509	CERAMIC 220P K 50V	1
C120	403 018 8509	CERAMIC 220P K 50V	1
C123	403 018 8509	CERAMIC 220P K 50V	1
C124	403 018 8509	CERAMIC 220P K 50V	1
C127	403 018 8509	CERAMIC 220P K 50V	1
C128	403 018 8509	CERAMIC 220P K 50V	1
C131	403 018 8509	CERAMIC 220P K 50V	1
C132	403 018 8509	CERAMIC 220P K 50V	1
C135	403 018 8509	CERAMIC 220P K 50V	1
C136	403 018 8509	CERAMIC 220P K 50V	1
C139	403 018 8509	CERAMIC 220P K 50V	1
C140	403 018 8509	CERAMIC 220P K 50V	1
C143	403 047 4305	ELECT 47U M 25V	1
C144	403 047 4305	ELECT 47U M 25V	1
C145	403 049 1609	ELECT 1U M 50V	1
C147	403 047 4305	ELECT 47U M 25V	1
C148	403 047 4305	ELECT 47U M 25V	1
C149	403 047 4305	ELECT 47U M 25V	1
C150	403 047 4305	ELECT 47U M 25V	1
C153	403 029 0509	CERAMIC 560P K 50V	1
C154	403 029 0509	CERAMIC 560P K 50V	1
C155	403 063 8103	POLYESTER 0.082U K 50V	1
C156	403 063 8103	POLYESTER 0.082U K 50V	1
C159	403 047 1502	ELECT 4.7U M 25V	1
C160	403 047 1502	ELECT 4.7U M 25V	1
C161	403 009 8105	CERAMIC 100P K 50V	1
C162	403 009 8105	CERAMIC 100P K 50V	1
C163	403 009 8105	CERAMIC 100P K 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
C164	403 009 8105	CERAMIC 100P K 50V	1
C165	403 008 5204	CERAMIC 10P D 50V	1
C166	403 008 5204	CERAMIC 10P D 50V	1
C167	403 042 0302	ELECT 10U M 16V	1
C168	403 042 0302	ELECT 10U M 16V	1
C169	403 050 1209	ELECT 2.2U M 50V	1
C170	403 050 1209	ELECT 2.2U M 50V	1
C171	403 018 8509	CERAMIC 220P K 50V	1
C172	403 018 8509	CERAMIC 220P K 50V	1
C173	403 074 2701	CERAMIC 0.047U Z 50V	1
C174	403 074 2701	CERAMIC 0.047U Z 50V	1
C175	403 047 1502	ELECT 4.7U M 25V	1
C176	403 047 1502	ELECT 4.7U M 25V	1
C183	403 038 9302	ELECT 33U M 6.3V	1
C184	403 038 9302	ELECT 33U M 6.3V	1
C185	403 012 9809	CERAMIC 15P K 50V	1
C186	403 012 9809	CERAMIC 15P K 50V	1
C187	403 121 0803	ELECT 220U M 63V	1
C188	403 121 0803	ELECT 220U M 63V	1
C191	403 062 0900	POLYESTER 0.047U K 50V	1
C192	403 062 0900	POLYESTER 0.047U K 50V	1
C193	403 074 2701	CERAMIC 0.047U Z 50V	1
C194	403 074 2701	CERAMIC 0.047U Z 50V	1
C195	403 039 2906	ELECT 47U M 6.3V	1
C197	404 012 7000	CERAMIC 0.01U P 500V	1
C198	404 012 7000	CERAMIC 0.01U P 500V	1
C199	404 012 7000	CERAMIC 0.01U P 500V	1
C200	404 012 7000	CERAMIC 0.01U P 500V	1
C201	620 006 6877	Capacitor 4700MF 55V	1
C202	620 006 6877	Capacitor 4700MF 55V	1
C203	403 051 3806	ELECT 47U M 50V	1
C204	403 051 3806	ELECT 47U M 50V	1
C205	403 047 1502	ELECT 4.7U M 25V	1
C206	403 047 1502	ELECT 4.7U M 25V	1
C207	403 047 4305	ELECT 47U M 25V	1
C208	403 047 4305	ELECT 47U M 25V	1
C209 ⚠	620 006 6679	Capacitor 0.01MF400V	1
C210	403 047 1502	ELECT 4.7U M 25V	1
C211	403 039 4504	ELECT 470U M 6.3V	1
C213	403 042 6205	ELECT 1000U M 16V	1
C214	403 038 4505	ELECT 1000U M 6.3V	1
C215	403 049 1609	ELECT 1U M 50V	1
C216	403 069 8404	CERAMIC 0.01U Z 50V	1
C217	403 042 3600	ELECT 100U M 16V	1
C218	403 043 3104	ELECT 2200U M 16V	1
C219	403 042 0302	ELECT 10U M 16V	1
C220	403 049 1609	ELECT 1U M 50V	1
C221	403 049 1609	ELECT 1U M 50V	1
C222	403 047 9607	ELECT 0.1U M 50V	1
C223	403 022 5907	CERAMIC 33P J 50V	1
C224	403 022 5907	CERAMIC 33P J 50V	1
C225	403 074 2701	CERAMIC 0.047U Z 50V	1
C226	403 018 8509	CERAMIC 220P K 50V	1
C227	403 018 8509	CERAMIC 220P K 50V	1
C232	403 018 8509	CERAMIC 220P K 50V	1
C233	403 018 8509	CERAMIC 220P K 50V	1
C234	403 018 8509	CERAMIC 220P K 50V	1
C235	403 018 8509	CERAMIC 220P K 50V	1
C236	403 018 8509	CERAMIC 220P K 50V	1
C250	403 054 5906	ELECT 10U M 100V	1
C251	403 039 7802	ELECT 100U M 10V	1
C901	403 047 4305	ELECT 47U M 25V	1
C902	403 047 4305	ELECT 47U M 25V	1
C903	403 059 6601	POLYESTER 0.022U K 50V	1
C904	403 059 6601	POLYESTER 0.022U K 50V	1
C905	403 050 8000	ELECT 3.3U M 50V	1
C906	403 050 8000	ELECT 3.3U M 50V	1
C907	403 057 0908	POLYESTER 0.01U K 50V	1
C908	403 057 0908	POLYESTER 0.01U K 50V	1
C909	403 048 7909	ELECT 0.47U M 50V	1
C910	403 048 7909	ELECT 0.47U M 50V	1
C911	403 061 8709	POLYESTER 4700P K 50V	1
C912	403 061 8709	POLYESTER 4700P K 50V	1
C913	403 063 8103	POLYESTER 0.082U K 50V	1
C914	403 063 8103	POLYESTER 0.082U K 50V	1
C915	403 058 1607	POLYESTER 1500P K 50V	1
C916	403 058 1607	POLYESTER 1500P K 50V	1
C917	403 059 6601	POLYESTER 0.022U K 50V	1
C918	403 059 6601	POLYESTER 0.022U K 50V	1

Ref. No.	Part No.	Description	Q'ty
C919	403 031 2805	CERAMIC 680P K 50V	1
C920	403 031 2805	CERAMIC 680P K 50V	1
C921	403 061 8709	POLYESTER 4700P K 50V	1
C922	403 061 8709	POLYESTER 4700P K 50V	1
C925	403 047 1502	ELECT 4.7U M 25V	1
R101	401 024 7004	CARBON 1K JA 1/6W	1
R102	401 024 7004	CARBON 1K JA 1/6W	1
R103	401 024 7707	CARBON 100K JA 1/6W	1
R104	401 024 7707	CARBON 100K JA 1/6W	1
R105	401 024 7707	CARBON 100K JA 1/6W	1
R106	401 024 7707	CARBON 100K JA 1/6W	1
R107	401 026 3905	CARBON 330 JA 1/6W	1
R108	401 026 3905	CARBON 330 JA 1/6W	1
R109	401 025 8703	CARBON 220K JA 1/6W	1
R110	401 025 8703	CARBON 220K JA 1/6W	1
R111	401 025 1902	CARBON 15K JA 1/6W	1
R112	401 025 1902	CARBON 15K JA 1/6W	1
R113	401 024 7707	CARBON 100K JA 1/6W	1
R114	401 024 7707	CARBON 100K JA 1/6W	1
R115	401 024 7004	CARBON 1K JA 1/6W	1
R116	401 024 7004	CARBON 1K JA 1/6W	1
R117	401 024 7004	CARBON 1K JA 1/6W	1
R118	401 024 7004	CARBON 1K JA 1/6W	1
R121	401 024 7004	CARBON 1K JA 1/6W	1
R122	401 024 7004	CARBON 1K JA 1/6W	1
R125	401 024 7004	CARBON 1K JA 1/6W	1
R126	401 024 7004	CARBON 1K JA 1/6W	1
R129	401 024 7004	CARBON 1K JA 1/6W	1
R130	401 024 7004	CARBON 1K JA 1/6W	1
R133	401 024 7004	CARBON 1K JA 1/6W	1
R134	401 024 7004	CARBON 1K JA 1/6W	1
R137	401 024 7004	CARBON 1K JA 1/6W	1
R138	401 024 7004	CARBON 1K JA 1/6W	1
R141	401 018 3807	CARBON 3.3K JA 1/4W	1
R142	401 018 3807	CARBON 3.3K JA 1/4W	1
R143	401 012 4503	CARBON 100 JA 1/4W	1
R144	401 012 4503	CARBON 100 JA 1/4W	1
R145	401 024 7400	CARBON 10K JA 1/6W	1
R147	401 012 4503	CARBON 100 JA 1/4W	1
R148	401 012 4503	CARBON 100 JA 1/4W	1
R149	401 012 4503	CARBON 100 JA 1/4W	1
R150	401 012 4503	CARBON 100 JA 1/4W	1
R151	401 024 8001	CARBON 1M JA 1/6W	1
R152	401 024 8001	CARBON 1M JA 1/6W	1
R153	401 025 8703	CARBON 220K JA 1/6W	1
R154	401 025 8703	CARBON 220K JA 1/6W	1
R155	401 027 2600	CARBON 5.6K JA 1/6W	1
R156	401 027 2600	CARBON 5.6K JA 1/6W	1
R157	401 026 9907	CARBON 4.7K JA 1/6W	1
R158	401 026 9907	CARBON 4.7K JA 1/6W	1
R161	401 024 7004	CARBON 1K JA 1/6W	1
R162	401 024 7004	CARBON 1K JA 1/6W	1
R163	401 024 7707	CARBON 100K JA 1/6W	1
R164	401 024 7707	CARBON 100K JA 1/6W	1
R165	401 027 2600	CARBON 5.6K JA 1/6W	1
R166	401 021 3009	CARBON 5.6K JA 1/4W	1
R167	402 039 3203	FUSIBLE RES 33 JA 1/4W	1
R168	402 039 3203	FUSIBLE RES 33 JA 1/4W	1
R169	401 025 1902	CARBON 15K JA 1/6W	1
R170	401 025 1902	CARBON 15K JA 1/6W	1
R173	401 027 5908	CARBON 68K JA 1/6W	1
R174	401 027 5908	CARBON 68K JA 1/6W	1
R175	401 025 3005	CARBON 1.6K JA 1/6W	1
R176	401 025 3005	CARBON 1.6K JA 1/6W	1
R179	402 039 3203	FUSIBLE RES 33 JA 1/4W	1
R180	402 039 3203	FUSIBLE RES 33 JA 1/4W	1
R181	401 015 6504	CARBON 2.2 JA 1/4W	1
R182	401 015 6504	CARBON 2.2 JA 1/4W	1
R183	401 027 5908	CARBON 68K JA 1/6W	1
R184	401 027 5908	CARBON 68K JA 1/6W	1
R185	401 015 6504	CARBON 2.2 JA 1/4W	1
R186	401 015 6504	CARBON 2.2 JA 1/4W	1
R187	401 064 0300	OXIDE-MT 0.22 JB 2W	1
R188	401 064 0300	OXIDE-MT 0.22 JB 2W	1
R189	401 064 0300	OXIDE-MT 0.22 JB 2W	1
R190	401 064 0300	OXIDE-MT 0.22 JB 2W	1
R191	401 019 6203	CARBON 4.7 JA 1/4W	1
R192	401 019 6203	CARBON 4.7 JA 1/4W	1
R193	401 054 7500	OXIDE-MT 10 JB 1/2W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R194	401 054 7500	OXIDE-MT 10 JB 1/2W	1
R195	401 027 3003	CARBON 56K JA 1/6W	1
R196	401 027 3003	CARBON 56K JA 1/6W	1
R197	401 024 9701	CARBON 12K JA 1/6W	1
R199	401 069 2705	OXIDE-MT 680 JB 2W	1
R200	401 069 2705	OXIDE-MT 680 JB 2W	1
R201	401 018 3807	CARBON 3.3K JA 1/4W	1
R202	401 018 3807	CARBON 3.3K JA 1/4W	1
R203	401 022 1905	CARBON 680 JA 1/4W	1
R204	401 022 1905	CARBON 680 JA 1/4W	1
R205	401 099 7305	OXIDE-MT 120 JB 2W	1
R206	401 099 7305	OXIDE-MT 120 JB 2W	1
R207	401 019 1901	CARBON 3.9K JA 1/4W	1
R208	401 111 5906	OXIDE-MT 180 JB 1/2W	1
R209	401 027 5502	CARBON 6.8K JA 1/6W	1
R210	401 026 4308	CARBON 3.3K JA 1/6W	1
R211	401 027 0309	CARBON 47K JA 1/6W	1
R212	401 024 7400	CARBON 10K JA 1/6W	1
R213	401 024 7400	CARBON 10K JA 1/6W	1
R214	401 024 7400	CARBON 10K JA 1/6W	1
R215	401 012 7009	CARBON 10K JA 1/4W	1
R216	401 012 7009	CARBON 10K JA 1/4W	1
R217	401 024 7004	CARBON 1K JA 1/6W	1
R218	401 024 7004	CARBON 1K JA 1/6W	1
R219	401 012 5708	CARBON 1K JA 1/4W	1
R220	401 012 5708	CARBON 1K JA 1/4W	1
R221	401 012 5708	CARBON 1K JA 1/4W	1
R222	401 024 6700	CARBON 100 JA 1/6W	1
R223	401 025 4606	CARBON 18K JA 1/6W	1
R224	401 024 7400	CARBON 10K JA 1/6W	1
R225	401 027 0507	CARBON 470K JA 1/6W	1
R226	401 021 4105	CARBON 56K JA 1/4W	1
R227	401 027 9005	CARBON 82K JA 1/6W	1
R228	401 024 7400	CARBON 10K JA 1/6W	1
R229	401 026 7408	CARBON 39K JA 1/6W	1
R230	401 012 3407	CARBON 10 JA 1/4W	1
R231	401 012 5708	CARBON 1K JA 1/4W	1
R234	401 024 9701	CARBON 12K JA 1/6W	1
R235	401 024 7004	CARBON 1K JA 1/6W	1
R241	401 026 1000	CARBON 2.7K JA 1/6W	1
R242	401 026 1000	CARBON 2.7K JA 1/6W	1
R243	401 024 9305	CARBON 1.2K JA 1/6W	1
R244	401 024 9305	CARBON 1.2K JA 1/6W	1
R250	401 027 3003	CARBON 56K JA 1/6W	1
R251	401 024 7707	CARBON 100K JA 1/6W	1
R252	401 027 3201	CARBON 560K JA 1/6W	1
R253	401 025 8208	CARBON 22K JA 1/6W	1
R254	401 026 9907	CARBON 4.7K JA 1/6W	1
R255	401 024 7400	CARBON 10K JA 1/6W	1
R901	401 012 4503	CARBON 100 JA 1/4W	1
R902	401 012 4503	CARBON 100 JA 1/4W	1
R903	401 026 6609	CARBON 390 JA 1/6W	1
R904	401 026 6609	CARBON 390 JA 1/6W	1
R905	401 024 7400	CARBON 10K JA 1/6W	1
R906	401 024 7400	CARBON 10K JA 1/6W	1
R907	401 025 8703	CARBON 220K JA 1/6W	1
R908	401 025 8703	CARBON 220K JA 1/6W	1
R909	401 027 2303	CARBON 560 JA 1/6W	1
R910	401 027 2303	CARBON 560 JA 1/6W	1
R911	401 026 6609	CARBON 390 JA 1/6W	1
R912	401 026 6609	CARBON 390 JA 1/6W	1
R913	401 024 7400	CARBON 10K JA 1/6W	1
R914	401 024 7400	CARBON 10K JA 1/6W	1
R915	401 024 7707	CARBON 100K JA 1/6W	1
R916	401 024 7707	CARBON 100K JA 1/6W	1
R917	401 028 0001	CARBON 910 JA 1/6W	1
R918	401 028 0001	CARBON 910 JA 1/6W	1
R919	401 026 6609	CARBON 390 JA 1/6W	1
R920	401 026 6609	CARBON 390 JA 1/6W	1
R921	401 024 7400	CARBON 10K JA 1/6W	1
R922	401 024 7400	CARBON 10K JA 1/6W	1
R923	401 027 0309	CARBON 47K JA 1/6W	1
R924	401 027 0309	CARBON 47K JA 1/6W	1
R925	401 024 9305	CARBON 1.2K JA 1/6W	1
R926	401 024 9305	CARBON 1.2K JA 1/6W	1
R927	401 026 6609	CARBON 390 JA 1/6W	1
R928	401 026 6609	CARBON 390 JA 1/6W	1
R929	401 024 7400	CARBON 10K JA 1/6W	1
R930	401 024 7400	CARBON 10K JA 1/6W	1

Ref. No.	Part No.	Description	Q'ty
R931	401 026 7408	CARBON 39K JA 1/6W	1
R932	401 026 7408	CARBON 39K JA 1/6W	1
R933	401 024 8407	CARBON 1.1K JA 1/6W	1
R934	401 024 8407	CARBON 1.1K JA 1/6W	1
R935	401 026 6609	CARBON 390 JA 1/6W	1
R936	401 026 6609	CARBON 390 JA 1/6W	1
R937	401 024 7400	CARBON 10K JA 1/6W	1
R938	401 024 7400	CARBON 10K JA 1/6W	1
R939	401 026 1307	CARBON 27K JA 1/6W	1
R940	401 026 1307	CARBON 27K JA 1/6W	1
R941	401 024 8407	CARBON 1.1K JA 1/6W	1
R942	401 024 8407	CARBON 1.1K JA 1/6W	1
R943	401 020 2003	CARBON 4.7K JA 1/4W	1
RB101	620 004 5575	Resistor 100K-4 J	1
RB102	620 004 5544	Resistor 10K-5	1
RB103	620 004 5506	Resistor 10K-6	1
RB104	620 004 5612	Resistor 10K-11 J	1
RB105	620 004 5551	Resistor 10K-3 J	1
		CONTROL P.C.B. ASSY	
42	620 183 4321	Control P.C.B. Assy	1
	620 051 9762	Spacer	1
	620 052 0089	Spacer	1
	620 052 0096	Spacer LED	1
	620 183 0972	Spacer Tact Switch	2
	620 183 0989	Spacer LED	2
	620 052 9280	Cover Shield	1
	620 053 9852	Reflector	1
	411 021 3107	SCR S-TPG BIN 2.6X8	3
PC301	620 183 1399	Jumper	1
PC302	620 183 1320	Jumper	1
PC303	620 183 1337	Jumper	1
SW301	620 016 7796	Tact Switch	1
SW302	620 016 7796	Tact Switch	1
SW303	620 016 7796	Tact Switch	1
SW304	620 016 7796	Tact Switch	1
SW305	620 016 7796	Tact Switch	1
SW306	620 016 7796	Tact Switch	1
SW307	620 016 7796	Tact Switch	1
IC301	409 056 9409	IC UPC1490HA	1
Q301	405 008 6700	TR 2SB808-F	1
or	405 008 7004	TR 2SB808-G	1
Q302	405 008 6700	TR 2SB808-F	1
or	405 008 7004	TR 2SB808-G	1
Q303	405 008 6700	TR 2SB808-F	1
or	405 008 7004	TR 2SB808-G	1
Q304	405 008 6700	TR 2SB808-F	1
or	405 008 7004	TR 2SB808-G	1
D301	407 065 0905	PHOTO DIODE SPS-501C-1	1
D302	407 027 6907	LED SLP-153B	1
D303	407 028 8900	LED SLP-173B-01	1
D304	407 028 8900	LED SLP-173B-01	1
D305	407 028 8900	LED SLP-173B-01	1
D306	407 028 8900	LED SLP-173B-01	1
D307	407 028 8900	LED SLP-173B-01	1
D308	407 028 8900	LED SLP-173B-01	1
D309	407 028 8900	LED SLP-173B-01	1
D310	407 062 7204	LED SEL2213C	1
D311	407 062 7204	LED SEL2213C	1
D312	407 062 7303	LED SEL2413E	1
D313	407 062 7303	LED SEL2413E	1
D314	407 062 7303	LED SEL2413E	1
D315	407 008 0405	DIODE GMB01-BT	1
D316	407 005 3805	DIODE DS442-BT	1
D317	407 005 3805	DIODE DS442-BT	1
C301	403 048 3406	ELECT 0.22U M 50V	1
C302	403 050 8000	ELECT 3.3U M 50V	1
C303	403 072 8200	CERAMIC 330P K 50V	1
C304	403 038 2402	ELECT 100U M 6.3V	1
R301	401 026 8108	CARBON 4.7 JA 1/6W	1
R302	401 025 3500	CARBON 160K JA 1/6W	1
R303	401 024 7400	CARBON 10K JA 1/6W	1
R304	401 012 4503	CARBON 100 JA 1/4W	1
R305	401 012 5708	CARBON 1K JA 1/4W	1
R306	401 012 5708	CARBON 1K JA 1/4W	1
R307	401 012 5708	CARBON 1K JA 1/4W	1
R308	401 012 5708	CARBON 1K JA 1/4W	1
R309	401 025 7805	CARBON 2.2K JA 1/6W	1
R310	401 025 7805	CARBON 2.2K JA 1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R311	401 025 7805	CARBON 2.2K JA 1/6W	1
R312	401 014 2903	CARBON 150 JA 1/4W	1
R313	401 014 2903	CARBON 150 JA 1/4W	1
R314	401 014 2903	CARBON 150 JA 1/4W	1
R315	401 014 2903	CARBON 150 JA 1/4W	1
R316	401 025 7805	CARBON 2.2K JA 1/6W	1
R317	401 027 5007	CARBON 68 JA 1/6W	1
VOLUME P.C.B. ASSY			
43	620 183 4338	Volume P.C.B. Assy	1
SW308	620 016 7796	Tact Switch (UP)	1
SW309	620 016 7796	Tact Switch (DOWN)	1
D318	407 008 0405	DIODE GMB01-BT	1
D319	407 008 0405	DIODE GMB01-BT	1
R/B P.C.B. ASSY			
44	620 183 4345	R/C P.C.B. Assy	1
CN401	620 021 5947	Plug 5P (TUNER)	1
CN402	620 021 5930	Plug 4P (CD)	1
R401	401 024 7004	CARBON 1K JA 1/6W	1
R402	401 024 7004	CARBON 1K JA 1/6W	1
R403	401 024 7004	CARBON 1K JA 1/6W	1
R404	401 024 7004	CARBON 1K JA 1/6W	1
SPEAKER OUT P.C.B. ASSY			
45	620 183 4352	Speaker Out P.C.B. Assy	1
	620 022 5151	4P Push Terminal (Speaker)	1
W601	620 020 5887	Connector 1P Assy	1
C601	403 069 1504	CERAMIC 1000P K 50V	1
C602	403 069 1504	CERAMIC 1000P K 50V	1
C603	403 069 4000	CERAMIC 1000P Z 50V	1
C604	403 069 4000	CERAMIC 1000P Z 50V	1
POWER SWITCH P.C.B. ASSY			
46	620 183 4369	Power Switch P.C.B. Assy	1
	620 017 1915	Jack 7P 6.45	1
	620 123 3025	Cover Capacitor	1
SW501	620 015 2341	Switch Push Power ⚠	1
PC501	620 182 9440	Wire 4 Parallel	1
C501⚠	620 006 6716	Capacitor 1000P 400V	1
R501	401 067 9102	OXIDE-MT 390 JB 2W	1
R502	401 067 9102	OXIDE-MT 390 JB 2W	1
R503	401 111 5807	OXIDE-MT 120 JB 1/2W	1
R504	401 111 5807	OXIDE-MT 120 JB 1/2W	1

Ref. No.	Part No.	Description	Q'ty
POWER SUPPLY P.C.B. ASSY			
47	620 183 4376	Power Supply P.C.B. Assy	1
	620 017 2721	Fuse Clip	4
	620 017 7153	Socket 2P	1
	620 017 7160	Socket 2P	1
	620 017 7177	Socket 2P	1
⚠	423 005 0507	FUSE T1.0A 250V	2
SUB TRANS P.C.B. ASSY			
48	620 183 4383	Sub Trans P.C.B. Assy	1
PC703	620 182 9709	Wire 2 Parallel	1
EC TERMINAL P.C.B. ASSY			
49	620 183 4406	EC Terminal P.C.B. Assy	1
	620 017 2721	Fuse Clip	2
	620 022 2587	EC Terminal 1P	2
	620 031 4763	Wire Wrap Terminal	3
⚠	423 006 4702	FUSE T2.5A 250V	1
POWER TR. P.C.B. ASSY			
50	620 183 4413	Power TR. P.C.B. Assy	1
Q103	405 022 1606	TR 2SD1289-Q	1
or	405 080 6100	TR 2SD1289-R	1
or	405 080 7800	TR 2SC3181N-O	1
or	405 080 7909	TR 2SC3181N-R	1
SUB TRANS 1 P.C.B. ASSY			
51	620 184 9691	Sub Trans 1 P.C.B. Assy	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

Unplug the AC power cord and set the front panel controls as follows:

- Power Switch to OFF position.
- Set the volume level to minimum level by Pressing the VOLUME DOWN button.
- IDLING CURRENT ADJUSTMENT VR101/VR102 (on the Main P.C.Board) setting to mechanical center position.
- Connect the AC power cord and Power Switch to ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 2 minutes before attempting this alignment.

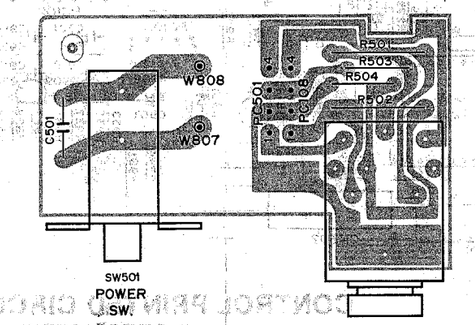
LEFT AMPLIFIER

1. Connect the DC Voltmeter between Pins TP1 and TP2 on the Main P.C.Board.
2. Adjust the VR101 for an indication of 3mV ±0.5mV on the DC Voltmeter.

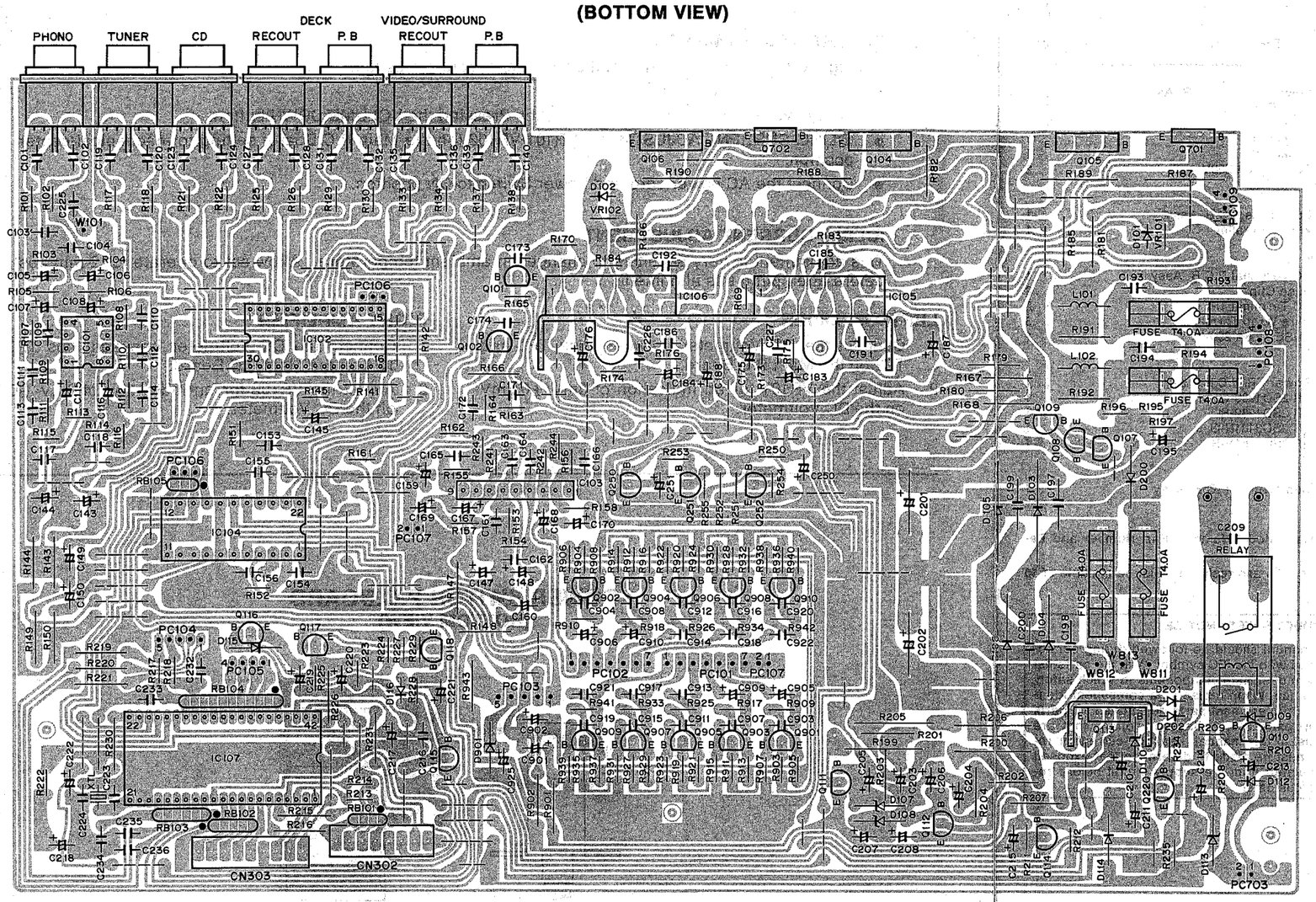
RIGHT AMPLIFIER

1. Connect the DC Voltmeter between Pins TP3 and TP4 on the Main P.C.Board.
2. Adjust the VR102 for an indication of 3mV ±0.5mV on the DC Voltmeter.

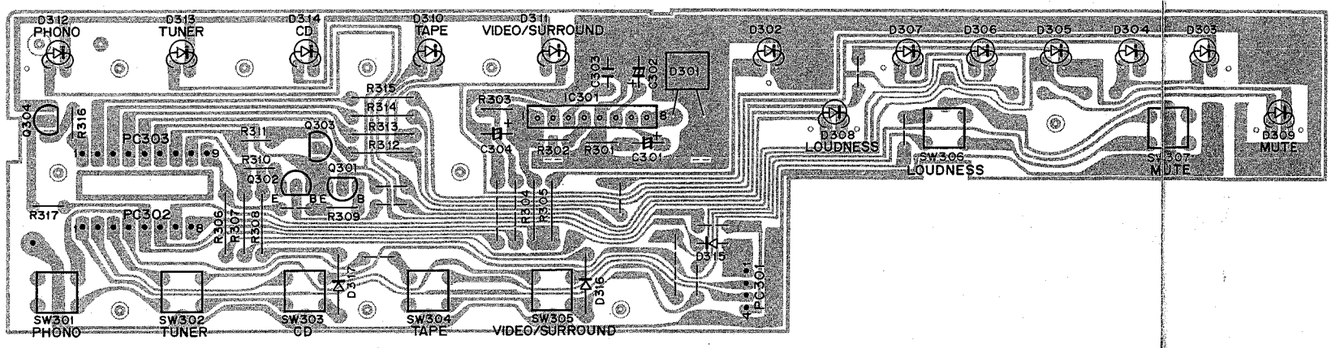
POWER SWITCH P.C.BOARD
(BOTTOM VIEW)



MAIN PRINTED CIRCUIT BOARD
(BOTTOM VIEW)



CONTROL PRINTED CIRCUIT BOARD
(BOTTOM VIEW)

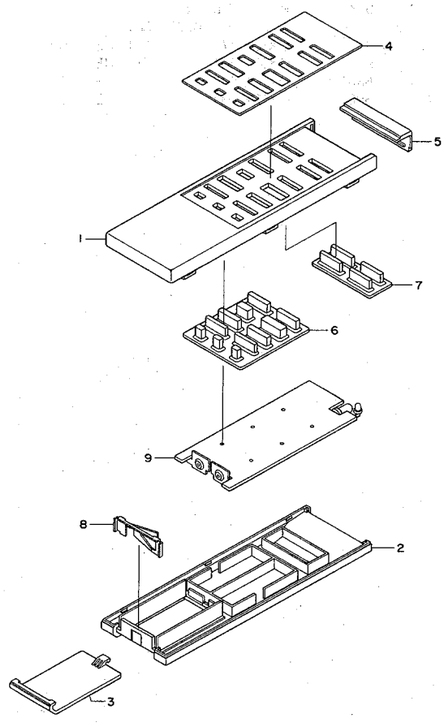


PARTS LIST & EXPLODED VIEW (Remote Control)

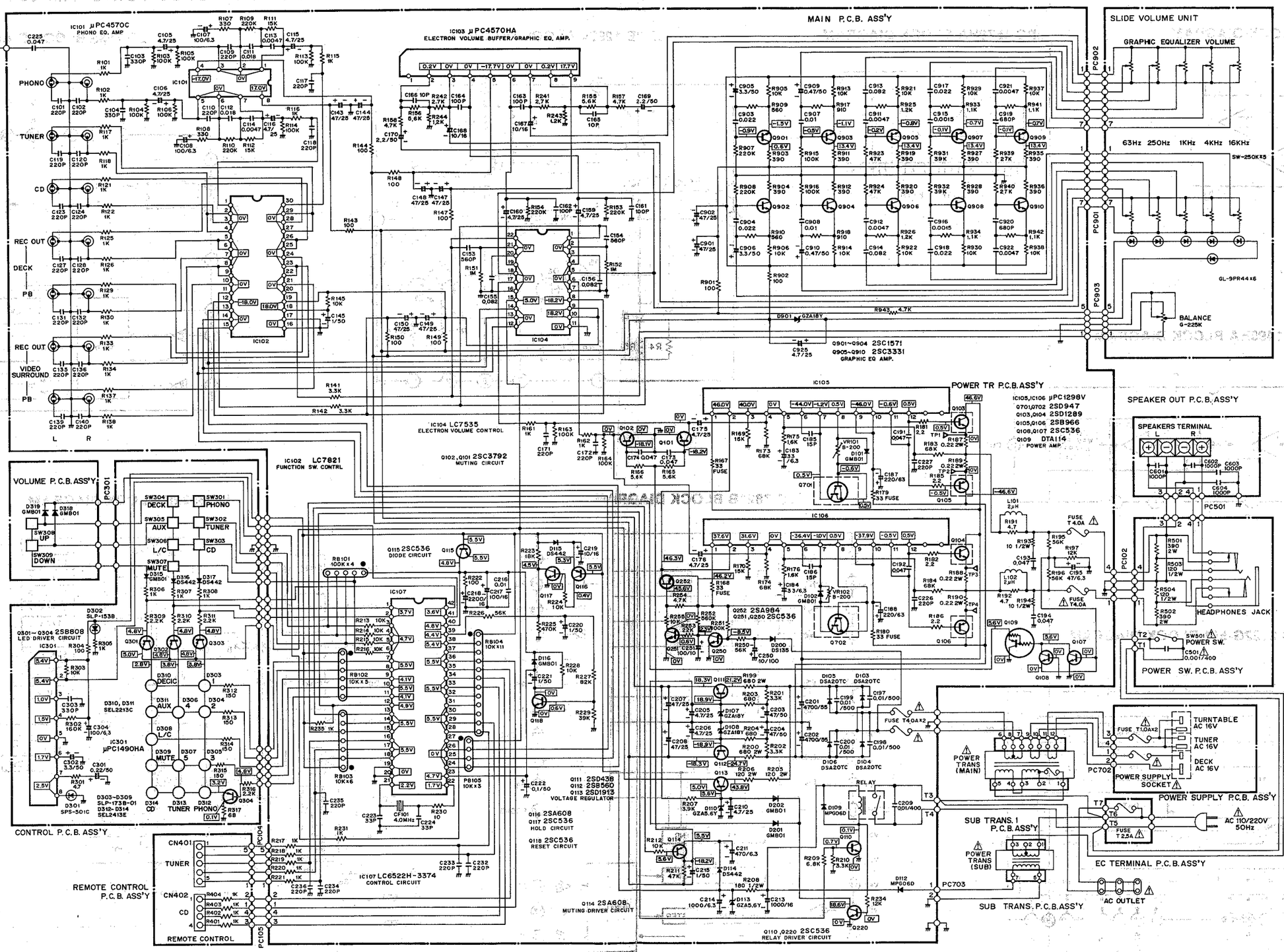
Ref. No.	Part No.	Description	Q'ty
REMOTE CONTROL CABINET			
	620 004 1447	REM-335 (Remote Control)	1
	620 057 8462	Bag Polyethylene-Exp.	1
1	620 038 8153	Cabinet Top	1
2	620 038 8160	Cabinet Bottom	1
3	620 040 0206	Lid Battery	1
4	620 040 6147	Plate Decorate	1
5	620 054 1381	Filter	1
6	620 111 7127	Knob Rubber (11 Key)	1
7	620 111 7141	Knob Rubber (4 Key)	1
8	620 122 1305	Spring Battery	1
9	620 080 3144	REM.T.M. P.C.B. Assy	1
REM.T.M. P.C.B. ASSY			
9	620 080 3144	REM.T.M. P.C.B. Assy	1
	620 122 1312	Terminal Anode (+)	1
	620 122 1329	Terminal Anode (−)	1
CR	620 007 3301	Ceramic KBR-455BT	1
IC1	409 121 5909	IC UPD6122G-501	1
TR1	405 021 2505	TR 2SD1048-X8-TA	1
or	405 021 2406	TR 2SD1048-X7-TA	1
D1	407 016 2408	LED LD271E	1
D2	407 036 6301	LED SLP-981C-50	1
C1	403 039 2906	ELECT 47U M 6.3V	1
C2	403 068 9709	CERAMIC 100P K 50V	1
C3	403 068 9709	CERAMIC 100P K 50V	1
R1	402 035 8004	MT-GLAZE 100 JA 1/8W	1
R2	402 033 8303	MT-GLAZE 1 JA 1/8W	1
R3	402 022 9106	MT-GLAZE 15 JA 1/8W	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.



SCHEMATIC DIAGRAM

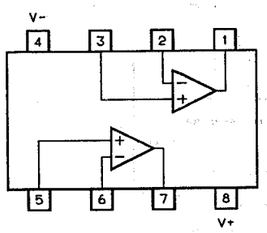


NOTES:

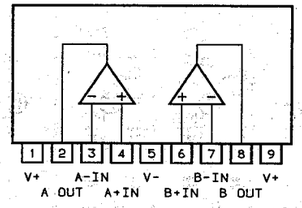
1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground.
   c. No signals at input terminals.
   d. AC input at 220 volts 50 Hz.
4. This is a basic schematic diagram.

INTEGRATED CIRCUIT BLOCK DIAGRAM

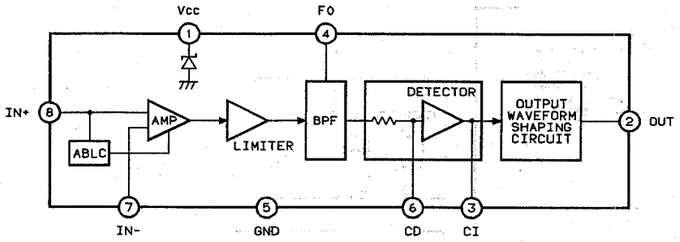
μPC 4570C BLOCK DIAGRAM



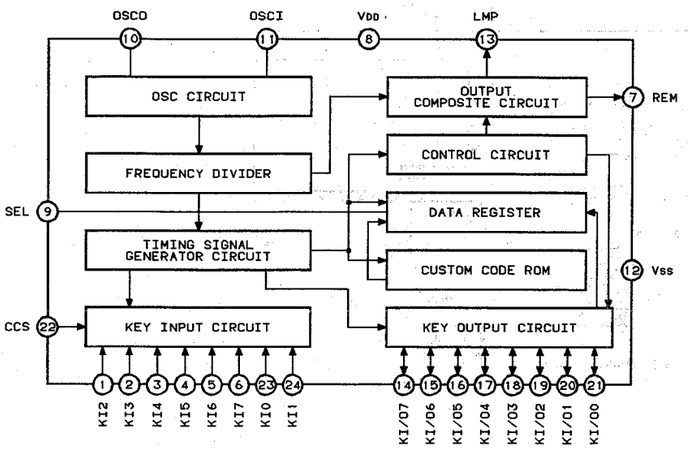
μPC 4570HA BLOCK DIAGRAM



μPC 1490HA BLOCK DIAGRAM

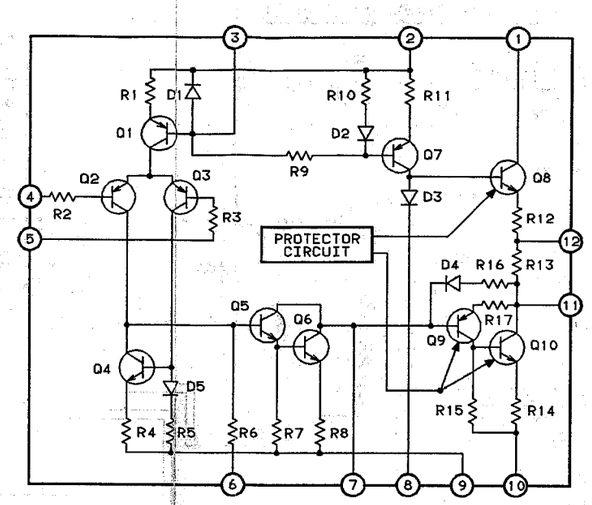


μPD 6122G-501 BLOCK DIAGRAM

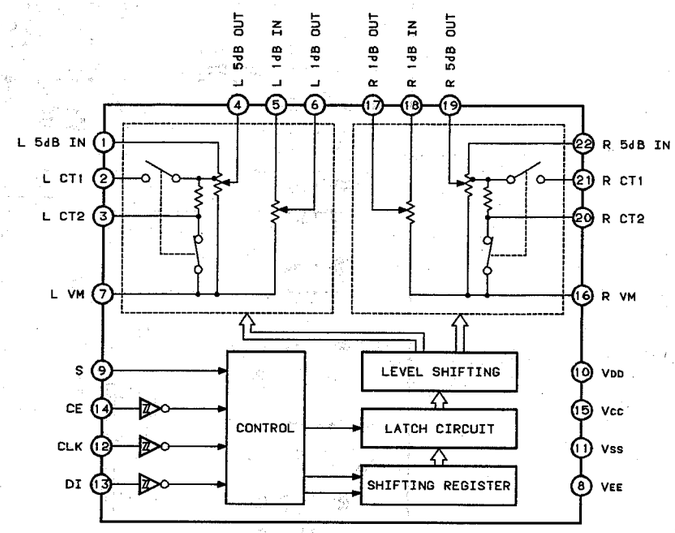


INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

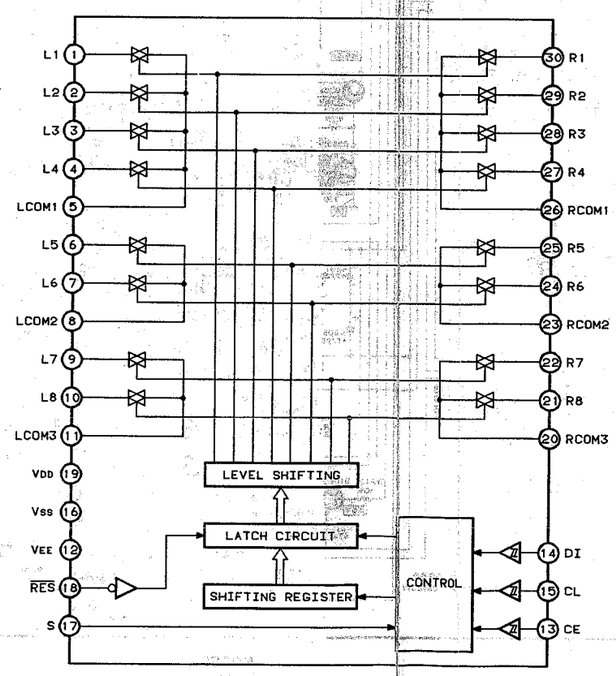
μPCB 1298V BLOCK DIAGRAM



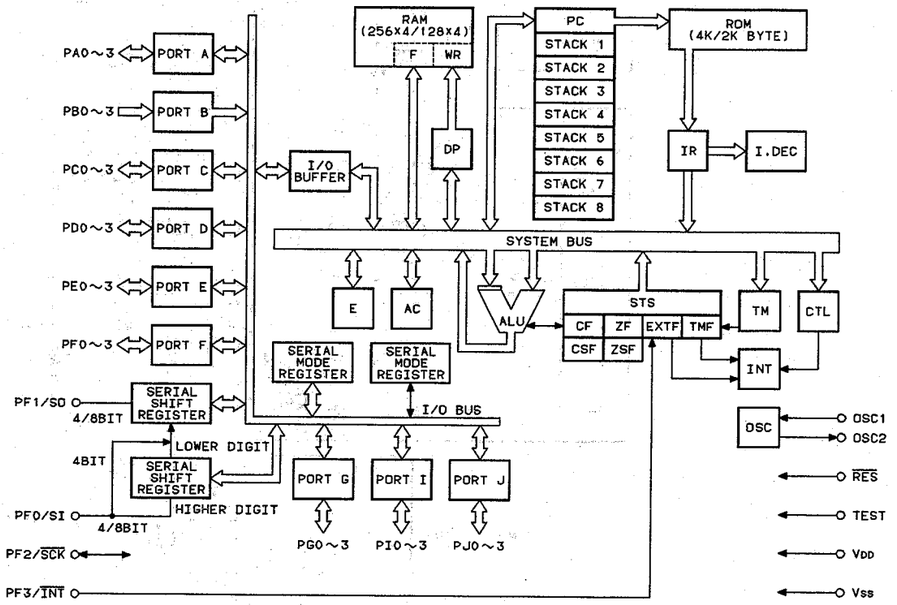
LC 7535 BLOCK DIAGRAM



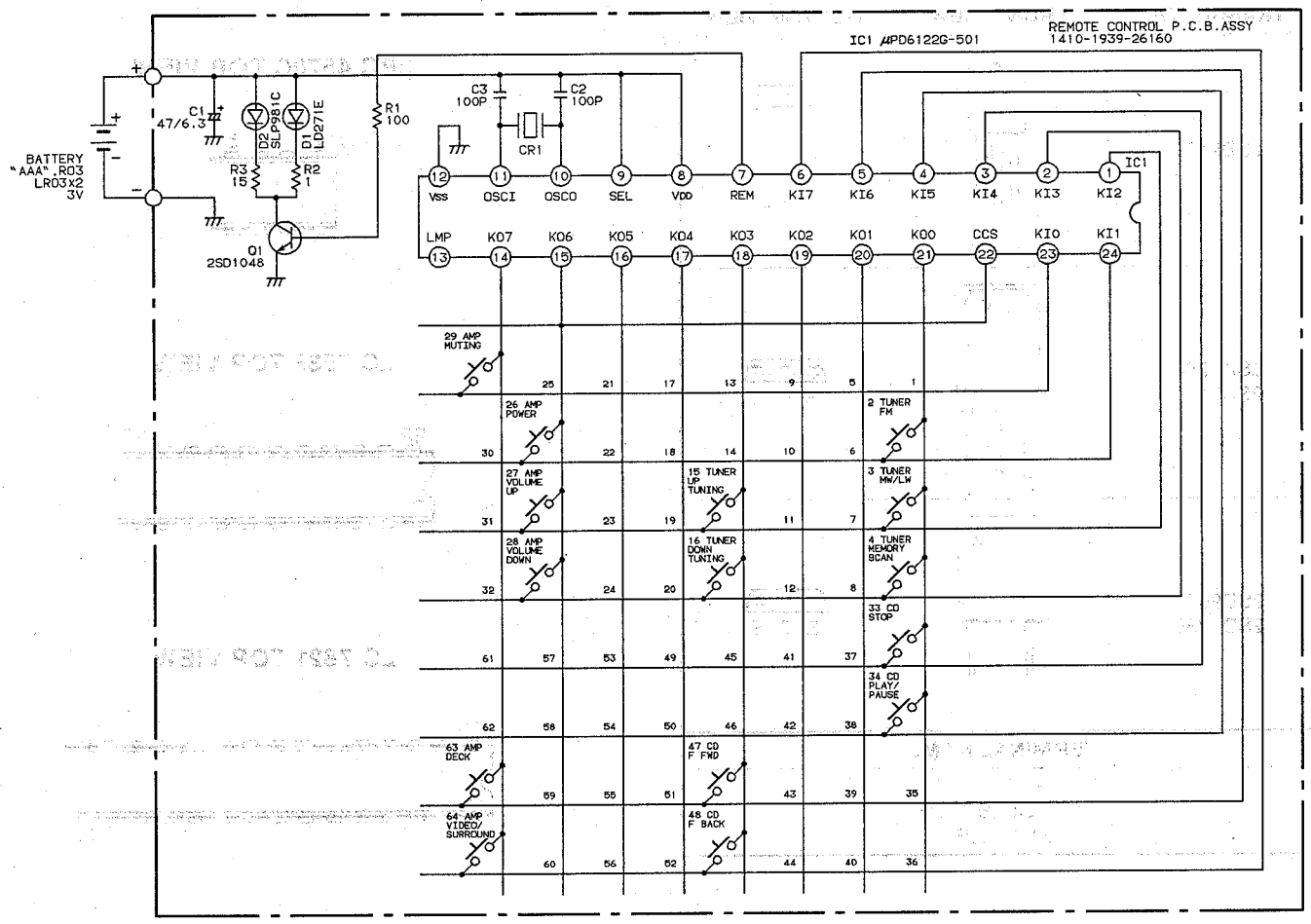
LC 7821B BLOCK DIAGRAM



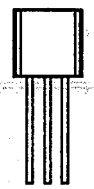
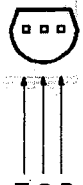
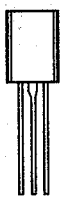
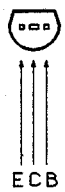
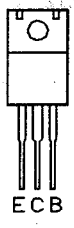
LC 6522H BLOCK DIAGRAM



SCHEMATIC DIAGRAM (Remote Control)

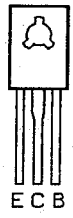
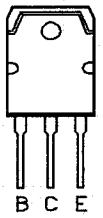
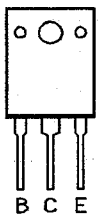


SEMICONDUCTOR LEAD IDENTIFICATION

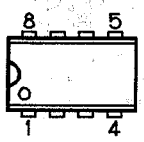
TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SA984 2SC536 2SC1571 2SC3331 2SC3792			2SB560 2SD438		
DTA114 2SB808			2SD1913		

TERMINAL NAME
B → BASE C → COLLECTOR E → EMITTER

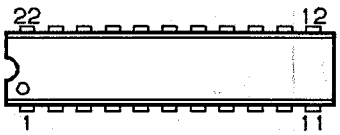
SEMICONDUCTOR LEAD IDENTIFICATION (Continued)

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SD947		
2SA1264 2SC3181		
2SB966 2SD1289		
TERMINAL NAME		
B → BASE C → COLLECTOR E → EMITTER		

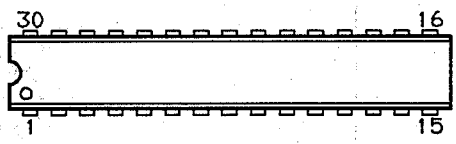
µPC 4570C TOP VIEW



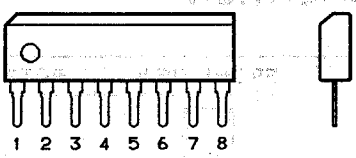
LC 7535 TOP VIEW



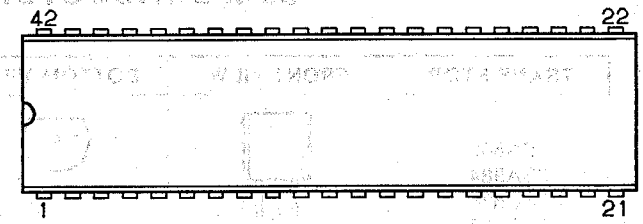
LC 7821 TOP VIEW



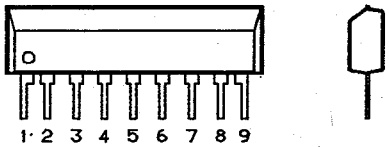
µPC 1490HA FRONT/SIDE VIEWS



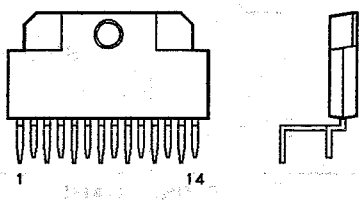
LC 6522H-3374 TOP VIEW



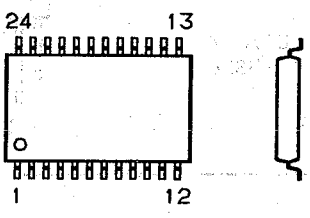
µPC 4570HA FRONT/SIDE VIEWS



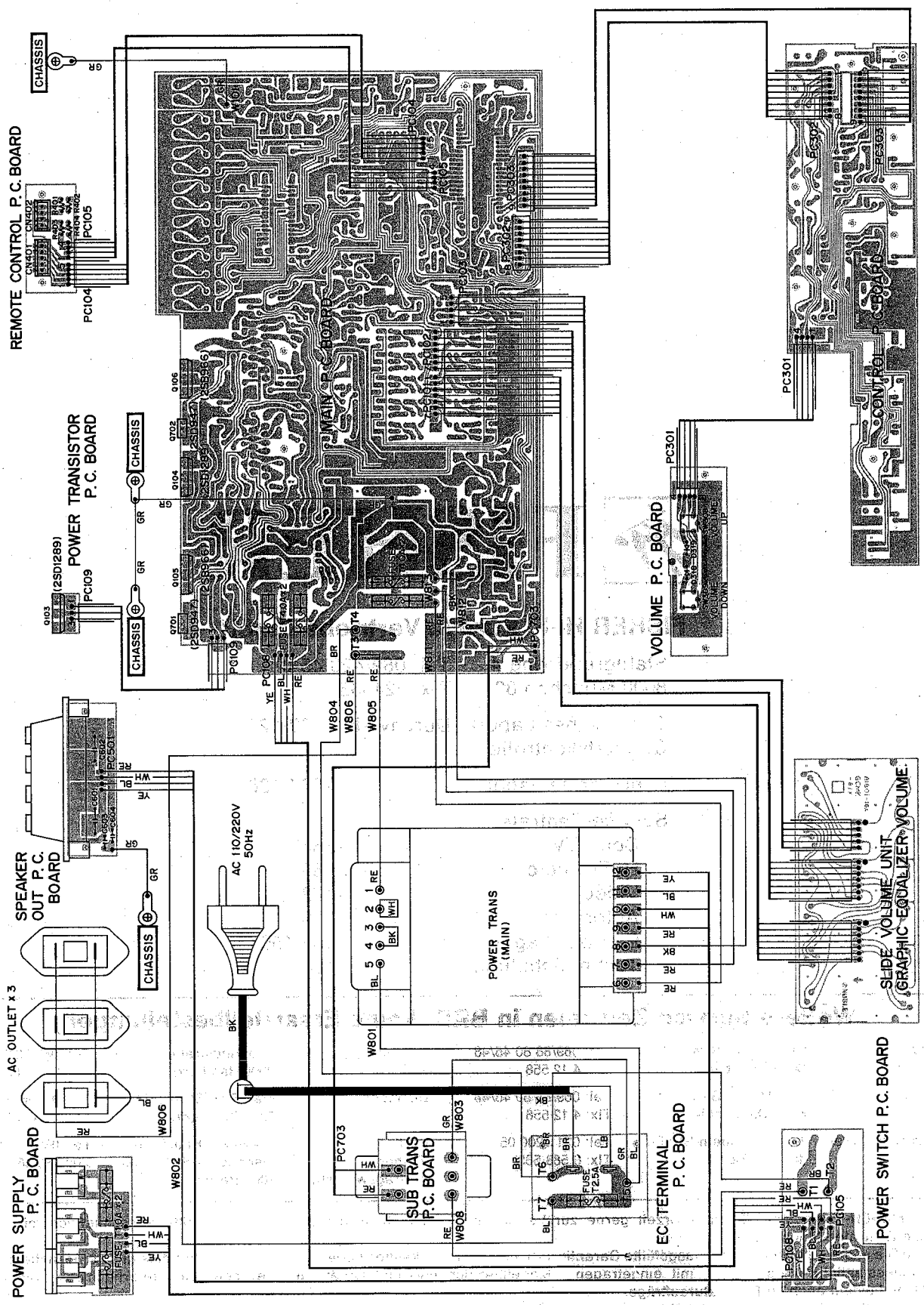
µPC 1298V FRONT/SIDE VIEWS



µPD 6122G-501 TOP/SIDE VIEWS



POINT TO POINT WIRING DIAGRAM



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A47500 March/'88/2,000/K **Printed in Japan**